

REMARKS

Claims 1-6, 8, 10-14 and 22-28 are pending in this application, of which claim 8 and 12-13 are withdrawn pursuant to the November 28, 2005 Restriction Requirement and the April 12, 2006 Election of Species Requirement. By this Amendment, claims 1 and 14 are amended, and claims 7 and 9 are cancelled without disclaimer or waiver of the cancelled subject matter. Applicants reserve the right to file a continuation or divisional application directed to the cancelled subject matter. No new matter is added.

Applicants appreciate the courtesies shown to Applicants' representative by Examiner Goff in the March 26 personal interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

I. Allowable Claims

Applicants appreciate the Office Action's indication that claims 6 and 22-28 are allowable.

II. Rejoinder Of Withdrawn Claims 8 and 12-13

By this Amendment, claim 1 is amended to recite that the three-dimensional structure is a groove and withdrawn claims 7 and 9, which were directed to wells, are cancelled. Thus, claim 1 is generic to the different recited groove structures. As agreed at the personal interview, the remaining withdrawn claims should be rejoined and allowed when claim 1 is allowed.

III. Claim Rejections Under 35 U.S.C. §112

The Office Action (i) rejects claims 1-6, 10-11, 14, and 22-28 under 35 U.S.C. §112, first paragraph, as not complying with the written description requirement and (ii) rejects claims 1-6, 10-11 and 14 under 35 U.S.C. §112, second paragraph, as being indefinite. Applicants respectfully traverse the rejections.

Regarding the rejection under §112, first paragraph, Applicants submit that support for an external heat source is found, for example, in paragraph [0043] which recites that "thermal energy is applied to the protruding ends of the heat stakes ..." The phrase "applied to" would be understood by one of ordinary skill in the art as including the use of a heat source to apply the heat to the stakes, i.e., a heat source external to the stakes, thus supporting the recited language.

Regarding the rejection under §112, second paragraph, by this Amendment, the last lines of independent claims 1 and 14 are amended to recite "three-dimensional structure" instead of "groove." Thus, the rejections are moot.

For the foregoing reasons, Applicants respectfully request withdrawal of the rejections.

IV. Claim Rejection Under 35 U.S.C. §102

The Office Action rejects claim 14 under 35 U.S.C. §102(b) over U.S. Patent No. 5,538,680 to Enders. Applicants respectfully traverse the rejection.

Enders discloses the joining of boss 40, which can be of metal (col. 6, line 13), to thermoplastic liner 12 within a resin matrix shell to form a composite pressure vessel. Boss 40 has mounting aperture 52 having, in turn, locking chamber 54. Thermoplastic liner 12 has studs 32. In operation, studs 32 are inserted through mounting apertures 52 and at least a portion of studs 32 are melted to conform studs 32 to mounting apertures 52 (col. 8, lines 32-38).

Thus, Enders fails to disclose at least one three-dimensional structure having a wall substantially orthogonal to the surface of the second object, the at least one three-dimensional structure being a groove (claim 14). As agreed at the personal interview, claim 14 is thus patentable over Enders.

For the foregoing reasons, Applicants respectfully request withdrawal of the rejection.

V. Claim Rejections Under 35 U.S.C. §103

The Office Action (i) rejects claims 1-5 and 14 under 35 U.S.C. §103(a) over U.S. Patent No. 5,519,425 to Deitl et al. (Deitl) in view of Enders, U.S. Patent Publication No. 2005/0006548 to Goh et al. (Goh), and U.S. Patent No. 5,794,878 to Carpenter et al. (Carpenter); and (ii) rejects claims 10 and 11 under 35 U.S.C. §103(a) over Deitl in view of Enders, Goh, and Carpenter, and further in view of U.S. Patent No. 6,460,965 to Ikegami et al. (Ikegami). Applicants respectfully traverse the rejections.

Deitl discloses a cartridge 10 having a housing 12 having housing stake pins 40. Housing stake pins 40 are inserted into locating holes 43 in heat sink 24 and stake pin ends 41 are ultrasonically formed into heads (Figs. 2-3; col. 6, lines 34-45). The locating holes 43 are straight bore holes through heat sink 24 (Fig. 3).

Goh discloses the joining of a printed circuit board 100 to a plastic element 120 such as a bezel or reflector by use of stake 130 having a lump 150.

Carpenter discloses the joining of damper housing 70 to prong portion 60 to form a spring cup 42 used in an inertial reel (Figs. 1C and 4).

Regarding independent claims 1 and 14, Deitl, Enders, Goh, and Carpenter fail to disclose at least one three-dimensional structure having a second surface that is substantially orthogonal to a first surface of the substrate, the at least one three-dimensional structure being a groove (claim 1) or having a wall substantially orthogonal to the surface of the second object, the at least one three-dimensional structure being a groove (claim 14). As agreed at the personal interview, the claims are thus patentable.

For the foregoing reasons, Applicants respectfully request withdrawal of the rejections.

VI. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

9

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